

REMARKS

Claims 1-30 are pending. Claims 1-30 were rejected. Independent claims 1, 19, 24, and 30 were rejected under 35 U.S.C. 102(e) as being anticipated by (U.S. Patent No. 6,080,201) Hojat.

The Examiner argues that Hojat describes a synthesizer that "utilizes conventional statistical models to determine the net lengths for nets connecting objects in the same partition." The Examiner argues that the Hojat conventional statistical model is used to "anticipate" or predict the net length for connecting objects.

The Applicants appreciate the Examiner's argument and acknowledge that Hojat describes using conventional statistical models to model placement of nets connecting objects. "When there is more than one placeable object in a partition, each object is presumed to be in the center of the partition. In this case, the synthesizer utilizes conventional statistical models to determine the net lengths for nets connecting objects in the same partition. For objects in different partitions, the synthesizer uses conventional maze routing schemes to determine the netlengths. The maze routing scheme is preferably one which presumes no blockages, i.e., the maze router can route directly from one circuit to another without the necessity of routing around objects or changing metal layers." (Column 8: Lines 60-67)

According to various embodiments, the techniques of the present invention recognize that cuts can be made within a single partition. Hojat's conventional statistical models do not make estimates for future delays associated with future cuts. Hojat only presumes that each object "to be in the center of the partition" without any consideration to the fact that the partition itself may be cut. The techniques of the present invention recognize that future cuts not yet made can significantly affect delays estimated delays. Consequently, estimates are made with consideration to future cuts not yet made.

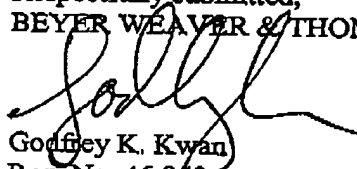
Hojat makes no mention of estimating future delays using estimates of future cuts not yet made. Hojat only mentions cuts already made as partition boundaries. No mention is made of future cuts such as future cuts that can be made within a single partition. The Examiner argues that Hojat does provide for undoing a previous cut. "In another embodiment of the invention, the placer is provided with an additional step for allowing it to undo a previous cut if the synthesizer

performs an undesirable transformation." (Column 11: Lines 13-16) However, this statement actually further emphasizes that Hojat does not teach or suggest estimating future delays using estimates of future cuts. According to various embodiments, the techniques of the present invention estimate future delays using estimates of future cuts so that future cuts not yet made do not later have to be undone. Hojat does not consider "future cuts not yet made" and therefore has to allow "it to undo a previous cut." As noted above, a cut made in the future can significantly affect delays.

However, independent claims 1 and 19 recite "wherein the statistical estimate for the future delay is made using estimates of future cuts not yet made in the target device." Independent claims 24 and 30 recite "future delay corresponding to an associated future connection to be placed across a second boundary associated with a future cut not yet made in the target device." Although the claims are believed patentable in their current form, amendments are being made to further clarify the claims and facilitate prosecution. Independent claims 1, 19, 24, and 30 are being amended to recite "a future cut not yet made" in the target device. Hojat makes no mention estimating delays using future cuts "not yet made." Hojat only considers existing boundaries and existing cuts and provides that a process can undo a previous cut.

In light of the above remarks, the rejections to the independent claims are believed overcome for at least the reasons noted above. Applicants believe that all pending claims are allowable in their present form. Please feel free to contact the undersigned at the number provided below if there are any questions, concerns, or remaining issues.

Respectfully submitted,
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